SONY

3-750-351-12 (1)

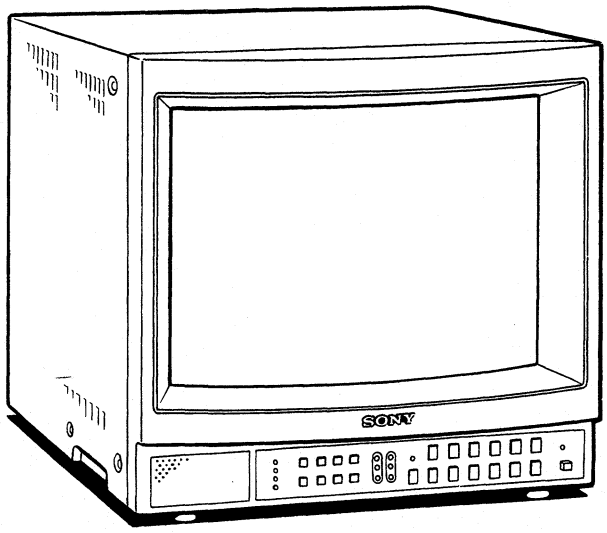
3001099
SONY BDA

TRINITRON® Color Video Monitor

PVM-1443MD
PVM-2043MD

Operating Instructions Page 2

Before operating the unit, please read this manual thoroughly and retain it for future reference.



This illustration shows PVM-1443MD.

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English

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltages are present inside the unit. Do not open the cabinet. Refer servicing to qualified personnel only.

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Precautions

On safety

- Operate the unit only on 220 – 240 V AC.
- The nameplate indicating operating voltage, power consumption, etc. is located on the rear.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- To disconnect the AC power cord, pull it out by grasping the plug. Never pull the cord itself.

On installation

- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On cleaning

To keep the unit looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

On repacking

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony dealer.

Features

Automatic beam current feedback circuit
The automatic beam current feedback circuit compensates for the beam distortion, secular distortion of the cathode-ray tube, etc., and always reproduces the same white display on the screen. This allows an extended use of the monitor.

Super Fine Pitch Trinitron picture tube
The Super Fine Pitch Trinitron picture tube (0.25 mm aperture grill for PVM-1443MD or 0.4 mm aperture grill for PVM-2043MD) gives high resolution picture. Horizontal resolution is more than 600 TV lines at the center of the picture. When used as a character display, up to 2,000 characters (80 characters/line × 25 lines) can be displayed with great clarity.

Analog RGB connector
Analog RGB signal of a video equipment can be input through this connector.

Digital RGB input connector
Digital RGB signal from a microcomputer can be input through this connector.

Y/C input connector
The video signal split into the chrominance signal (C) and the luminance signal (Y) can be input through this connector, eliminating the interference between the two signals which tends to occur in a composite video signal and assuring the video quality.

VTR input connector
When connected to a VTR having the 8-pin TV connector, video and audio signals can be fed through this connector with a single cable.

Control S connector
When this connector is connected to the "control S" output of other equipment, the remote controls of the aperture, brightness, chroma, phase, contrast and volume settings are possible.

Automatic release of BNC-type connector termination
The BNC-type input connector is terminated at 75 ohms inside when the BNC-type output connector is open. When a cable is connected to the BNC-type output connector, the 75-ohm termination is automatically released, and the signal input through the IN connector is output from the corresponding OUT connector.

Four color systems available
The monitor can display PAL, SECAM, NTSC3.58 and NTSC4.43* signals. The appropriate color system is selected automatically.

* A signal of NTSC4.43 is obtained by playing back NTSC-recorded video cassettes with a video tape recorder/player especially designed for use with this system.

Comb Filter
When NTSC video signals are received, a comb filter activates to increase the resolution, resulting in fine picture detail without color spill or color noise.

Blue only mode
In the blue only mode, an apparent monochrome display is obtained with all three cathodes driven with a blue signal. This facilitates color saturation and phase adjustments and observation of VTR noise.

Underscan mode
The signal normally scanned outside of the screen can be monitored in the underscan mode.

Note

The bright scanning lines which may appear on the top edge of the screen when the monitor is in the underscan mode are caused by an internal test signal, rather than the input signal.

Horizontal/vertical delay mode
The horizontal and vertical sync signals can be checked simultaneously in the H/V delay mode.

External sync input
When the ANALOG/DIGITAL (EXT SYNC) button is depressed, the monitor can be operated on the sync signal supplied from an external sync generator.

Color temperature selector
Color temperature of either 9,300 K or 6,500 K is selectable with the COLOR TEMP selector. For precise adjustment, use the BIAS and GAIN adjustment controls.

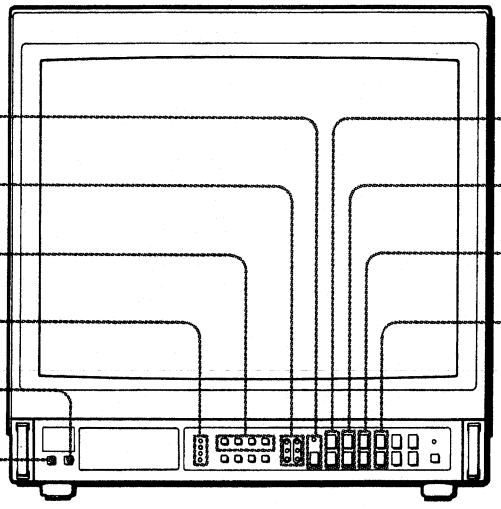
Light-touch picture adjustment buttons
The aperture, brightness, chroma, phase, contrast and volume buttons can be adjusted by touching the buttons lightly. The adjusted settings will be stored in memory even when the monitor is turned off.

EIA standard 19-inch rack mounting
The monitor can be mounted in an EIA standard 19-inch rack:
PVM-1443MD: by using an optional SLR-102 slide rail and MB-502A mounting bracket.
PVM-2043MD: by using an optional SLR-101 slide rail and the supplied rack mounting bracket.
For details on mounting, see the appropriate instruction manual.

Location and Function of Parts and Controls

Front panel

The illustration shows the front panel of PVM-2043MD. The name and location of parts and controls are same for PVM-1443MD, except for the DEGAUSS button and 3.58 TRAP buttton which are equipped with PVM-2043MD only.



1 RESET button and response indicator
Press to return the PHASE, CHROMA, BRIGHT and APERTURE control settings to the factory set levels. The response indicator flashes when the above buttons, the CONTRAST button, the VOL button or the RESET button is pressed.

2 BIAS and GAIN adjustment controls
Used for white balance adjustment.
GAIN and BIAS controls are provided for the R (red), G (green) and B (blue) screens.
BIAS: Adjust the white balance and brightness of the screen at the lowlight with these controls.
GAIN: Adjust the white balance and contrast of the screen at the highlight with these controls.

3 INPUT selectors
Press to select the program to be monitored.
A: for a signal fed through the LINE A connectors.
B: for a signal fed through the LINE B connectors.
Y/C/VTR: for a signal fed through the Y/C-INPUT connectors or VTR connector.
When both the Y/C-INPUT and VTR connectors are connected to video equipment, the input signal fed through the Y/C-INPUT connector has priority over the one fed through the VTR connector.
RGB: for a signal fed through the ANALOG RGB connectors or DIGITAL RGB connector selected with 14 ANALOG/DIGITAL (EXT SYNC) button.

4 Color system indicators
The indicator of the color system being received lights up in red.

5 3.58 TRAP button (NTSC 3.58 only) (PVM-2043MD only)
Normally set this button in the released position (⊓OFF) to obtain fine picture details without color spill or color noise. When a microcomputer, such as APPLE II, is connected and stripes appear, depress this button (⊓ON).

6 DEGAUSS button (PVM-2043MD only)
Press this button momentarily. The screen will be demagnetized for approximately 5 seconds. Wait for 10 minutes or more before activating the button again.

7 APERTURE buttons
Press + for more sharpness or – for less.

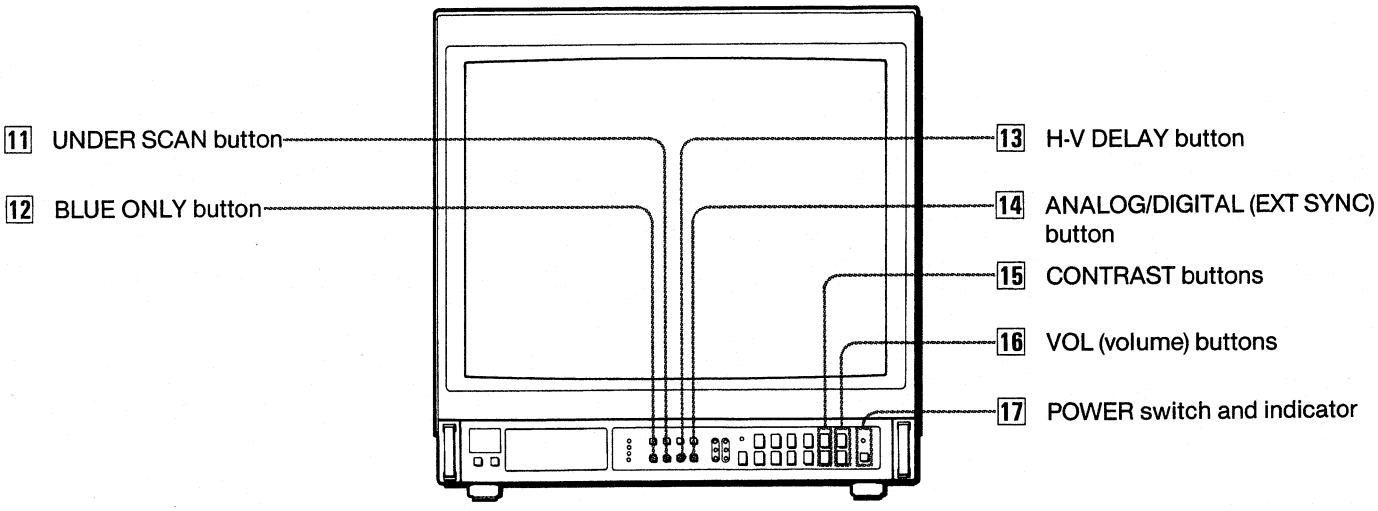
8 BRIGHT (brightness) buttons
Press + for more brightness or – for less.

9 CHROMA buttons
Press + for more color intensity or – for less.

10 PHASE buttons
This button is effective only for the $NTSC_{3.58}$ and $NTSC_{4.43}$ color system.
Press GRN (green) to make the skin tones greenish or PUR (purple) to make them purplish.

Note

The APERTURE, CHROMA, PHASE control settings have no effect on the pictures of analog RGB or digital RGB signals.


11 UNDER SCAN button
12 BLUE ONLY button
13 H-V DELAY button
14 ANALOG/DIGITAL (EXT SYNC) button
15 CONTRAST buttons
16 VOL (volume) buttons
17 POWER switch and indicator

11 UNDER SCAN button

Depress for underscanning. The display size is reduced by approximately 3% so that four corners of the raster are visible.

12 BLUE ONLY button

Depress to turn off the red and green signals. A blue signal is displayed as an apparent monochrome picture on the screen. This facilitates "chroma" and "phase*" control adjustments and observation of VTR noise.

* "Phase" control adjustment is effective only for the NTSC signals.

13 H-V DELAY button

Depress to observe the horizontal and vertical sync signals at the same time.
The horizontal sync signal is displayed in the left quarter of the screen; the vertical signal is displayed near the center of the screen.

14 ANALOG/DIGITAL (EXT SYNC) button

This button functions as ANALOG/DIGITAL selector and EXT SYNC selector.

As ANALOG/DIGITAL selector

Depress to monitor a signal fed through the ANALOG RGB connectors.
Release to monitor a signal fed through the DIGITAL RGB connector.

For EXT SYNC selector

Depress to operate the monitor on an external sync signal fed through the EXT SYNC connector on the rear panel (EXT).
Release to operate the monitor on the sync signal from the displayed composite video signal (INT).

15 CONTRAST buttons

Press + to make the contrast, color intensity and brightness stronger or – to make them weaker.

16 VOL (volume) buttons

Press + for more volume or – for less.

17 POWER switch and indicator

Depress to turn the monitor on.
The indicator will light up in green.
Press the switch again to turn the monitor off.

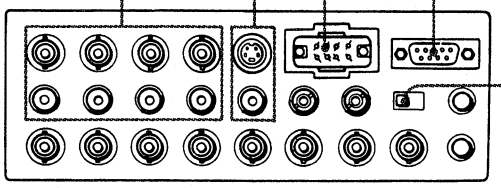
Picture Adjustment Buttons

The picture adjustment buttons operate in the following input mode (indicated as "Yes").

Input mode / Button	• LINE A, LINE B • Y/C • VTR	• Digital RGB • Analog RGB
APERTURE	Yes	No
BRIGHT	Yes	Yes
CHROMA	Yes	No
PHASE	Yes (NTSC only)	No
CONTRAST	Yes	Yes
VOL	Yes	No

Location and Function of Parts and Controls

Rear panel


18 Y/C-INPUT connectors
19 LINE A, LINE B connectors
20 VTR input connector
21 DIGITAL RGB connector
22 COLOR TEMP selector

18 Y/C-INPUT connectors

VIDEO (4-pin): Connect to the Y/C separate output of a video camera or a VTR.

AUDIO: Connect to the audio output of a video camera or a VTR.

To monitor the input signal fed through these connectors, press the Y/C/VTR button on the front panel.

19 LINE A, LINE B connectors

Two groups (A and B) of line input connectors for the composite video and audio signals and their loop-through output connectors.

To monitor the input signal fed through these connectors, press the A or B button on the front panel.

VIDEO IN (BNC type): Connect to the video output of a video equipment, such as a VTR or a color video camera.

VIDEO OUT (BNC type): Loop-through output of the VIDEO IN connector. Connect to the video input for a VTR or another monitor.
When the cable is connected to this connector, the 75-ohm termination of the input is automatically released, and the signal input to the VIDEO IN connector is output from this connector.

AUDIO IN (phono jack): Connect to the audio output of a VTR or to a microphone via a suitable microphone amplifier.

AUDIO OUT (phono jack): Loop-through output of the AUDIO IN jack. Connect to the audio input of a VTR or another monitor.

20 VTR input connector (8-pin)

Line input for the video and audio signals. When connected to the 8-pin TV connector of a VTR, the video and audio playback signal from the VTR can be input through a single cable.

To monitor the input signal fed through this connector, press the Y/C/VTR button on the front panel, with the Y/C-INPUT connectors connected to no outputs.

When both VTR and Y/C-INPUT connectors are connected to video equipment, the input signal fed through the Y/C-INPUT connectors has priority over the one fed through the VTR connectors.

21 DIGITAL RGB connector (9-pin)

Connect with a microcomputer having a digital (TTL level) RGB video output.

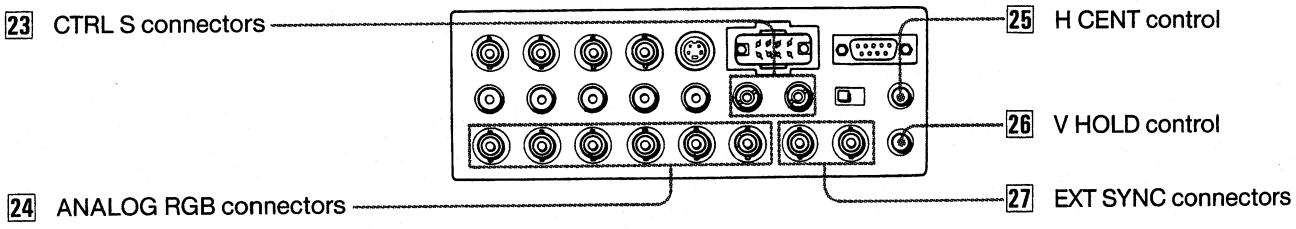
To monitor the input signal fed through this connector, press the RGB button and keep the ANALOG/DIGITAL (EXT SYNC) button released.

Note

For connection of digital RGB signal, be sure to use an optional SMF-520 connecting cable.

22 COLOR TEMP (temperature) selector

Select the color temperature position, 9300 K or 6500 K.



23 CTRL S (control S) connectors (minijack)
For remote control of the APERTURE, BRIGHT, CHROMA, PHASE, CONTRAST and VOL control buttons.
IN: Connect to the "control S" output of other equipment.
OUT: Connect to the CTRL S IN connector of another monitor by using a connecting cord (miniplug⟷ miniplug).

24 ANALOG RGB connectors (BNC type)
R/G/B IN: Connect to the analog R/G/B outputs of a video camera.
To monitor a signal fed through these connectors, press the RGB button and depress the ANALOG/DIGITAL (EXT SYNC) button.
R/G/B OUT: Loop-through outputs of the R/G/B IN connectors. Connect to the analog R/G/B inputs of a video camera.
When the cable is connected to these connectors, the 75-ohm termination of the input is released, and the signal input to the R/G/B IN connectors is output from these connectors.

25 H CENT (horizontal centering) control
When a digital R/G/B signal is monitored, turn to center the picture if it is decentered.

26 V HOLD (vertical hold) control
Turn to stabilize the picture if it rolls vertically.

27 EXT SYNC (external sync) connectors (BNC type)
IN: Connect to the output of a sync generator.
To monitor the sync signal fed through this connector, depress the ANALOG/DIGITAL (EXT SYNC) button.
OUT: Loop-through output of the SYNC IN connector. Connect to the SYNC input of a video camera.
When the cable is connected to this connector, the 75-ohm termination of the input is released, and the signal input to the IN connector is output from this connector.

Specifications

Video signal

Frequency response
- Line input: More than 7 MHz (–3 dB)
- Y/C input: More than 8 MHz (–3 dB)
- Component input (Y/R-Y/B-Y): More than 8 MHz (–3 dB)
- R.G.B. input (analog): More than 9 MHz (–3 dB)

Aperture correction
- –4.5 to +6.5 dB (at 4.5 MHz)

Synchronization: AFC time constant: 1 msec

Line pull range: Horizontal: ±500 Hz, Vertical: 8 Hz

Picture performance

	PVM-1443MD	PVM-2043MD
Normal scan	7% overscan of CRT effective screen area	
Underscan	3% underscan of CRT effective screen area	
H. Linearity	Less than 4%	Less than 8%
V. Linearity	Less than 5%	Less than 7%
Convergence Central area Peripheral area	 0.6 mm (Typical) 0.8 mm (Typical)	 0.7 mm (Typical) 1.3 mm (Typical)
Raster size stability	H: 1.0%, V: 1.5%	
High voltage regulation	3%	4%
Audio output	0.6 W (Max.)	
CRT	EBU	
Color temperature	6,500 K/9,300 K (+8MPCD), selectable	

Inputs

VIDEO IN: BNC connector
AUDIO IN: phono jack
VTR: 8-pin connector (See "VTR connector" on page 9.)
Y/C-INPUT
- VIDEO: 4-pin connector (See "Y/C-INPUT connector" on page 10.)
- AUDIO: phono jack

EXT SYNC: BNC connector
- composite sync 1 – 4 Vp-p, negative, 75 ohms terminated, automatically released when cable is connected to the output connector.

ANALOG RGB: BNC connector
- 0.7 Vp-p, ±6 dB, non composite
- 75 ohms terminated, automatically released when cable is connected to the output connector.

DIGITAL RGB: 9-pin connector (See "DIGITAL RGB connector" on page 9.)
CTRL S: Minijack

Outputs

VIDEO OUT: BNC connector
- Loop-through

AUDIO OUT: Phono jack
- Loop-through

EXT SYNC: BNC connector
- Loop-through

ANALOG RGB: BNC connector
- Loop-through

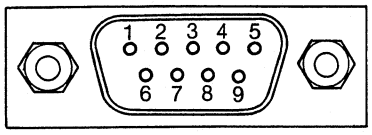
CTRL S: Minijack
- Loop-through

General

	PVM-1443MD	PVM-2043MD
AC regulation range	220–240 V AC, 50/60 Hz	
Power consumption	Approx. 75 Wh	Approx. 98 Wh
Operating temperature range	0°C to 35°C (32°F to 95°F)	
Dimensions	Approx. 346 × 340 × 412 mm (w/h/d) (13 5/8 × 13 1/2 × 16 1/4 inches)	Approx. 452 × 458 × 513 mm (w/h/d) (17 7/8 × 18 1/8 × 20 1/4 inches)
Weight	Approx. 16.5 kg (36 lb 6 oz)	Approx. 31.0 kg (68 lb 5 oz)
Supplied accessories		Control cover (1) Rack mounting bracket (for EIA standard racks) (1 set)

Pin assignment

DIGITAL RGB connector (9-pin)



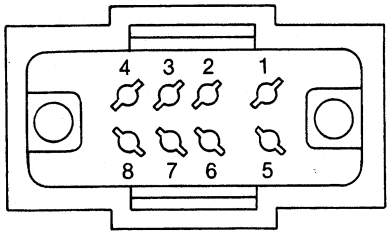
Pin No.	Signal	Signal level
1	GND (ground)	GND
2	GND for the signal	GND
3	Red input	Positive polarity (TTL level)
4	Green input	↑
5	Blue input	↑
6	Intensity	↑
7	NC (no connection)	←→
8	H-SYNC	Positive or negative polarity (TTL level)
9	V-SYNC	Same polarity as H-SYNC (TTL level)

Note

If the intensity function of Pin No. 6 is not used, set the internal switch on the Qd board to the B position, and connect the Pin No. 6 to the GND. With this setting, when the positive intensity signal synchronized to the characters on the screen is fed, the luminance of the characters will be increased.

If the specific intensity function, such as that of an IBM microcomputer, is used, set the internal switch on the Qd board to the A position, and feed the intensity control signal to Pin No. 6.

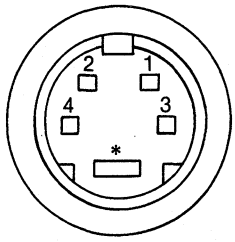
VTR connector (8-pin)



Pin No.	Signal	Description
1	Audio input	−5 dBs, high input impedance (more than 47 kilohms)
2	Video input	Composite 1 Vp-p, sync negative, 75 ohms
3	GND	GND
4	NC	←→
5	GND	GND
6	GND	GND
7	GND	GND
8	GND	GND

Specifications

Y/C (Y/C separate) INPUT connector (4-pin)

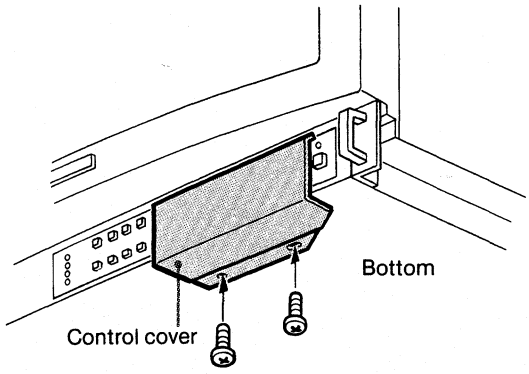


Pin No.	Signal	Description
1	Y-input	1 Vp-p, sync negative, 75 ohms
2	CHROMA sub-carrier-input	300 mVp-p, burst Delay time between Y and C: within 0±100 nsec., 75 ohms
3	GND for Y-input	GND
4	GND for CHROMA-input	GND
*	(Slot for internal switch)	Press the switch inside this slot. The signal from Y/C-INPUT connector has priority over the one from VTR (8-pin) connector.

Design and specifications subject to change without notice.

Attaching the control cover (PVM-2043MD only)

In order to protect the control buttons on the front panel from undesired touching, attach the supplied control cover.



Secure the control cover with the screws.